

Translating Science into Action

Chicago
Wilderness



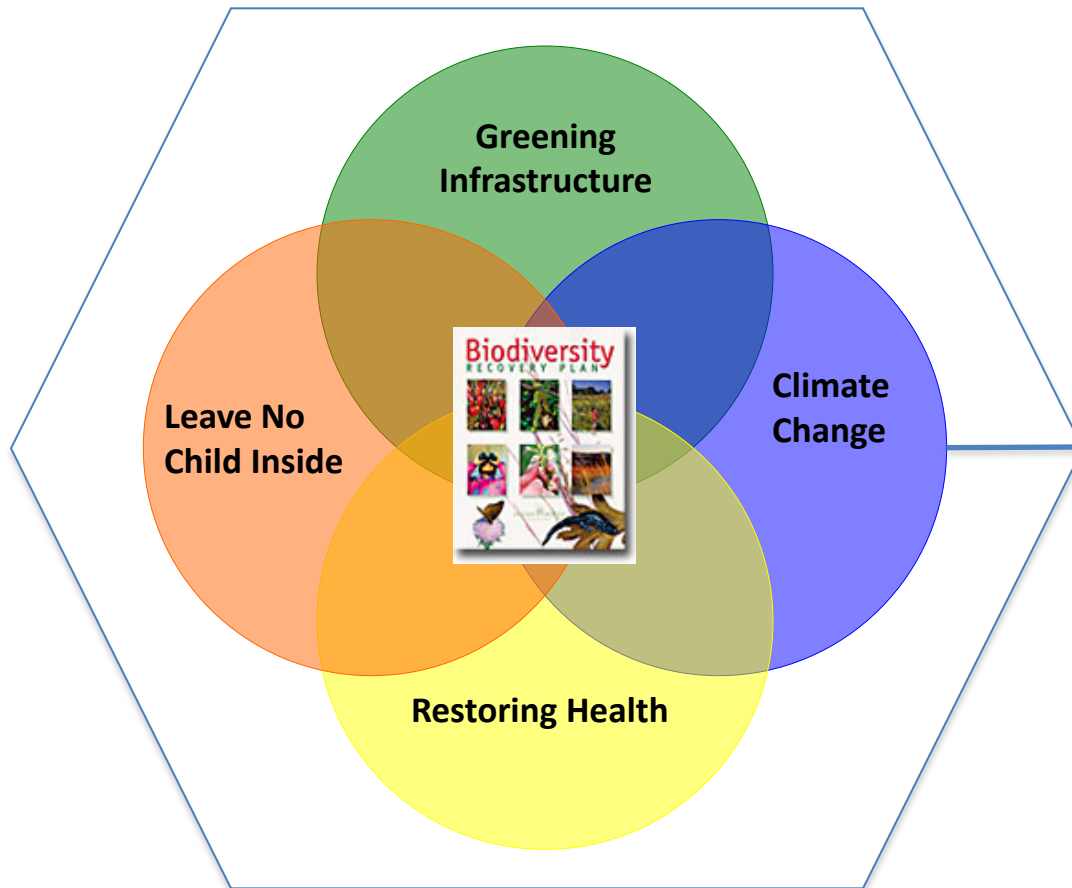
***Climate*ACTION**

Climate-smart management for urban natural areas

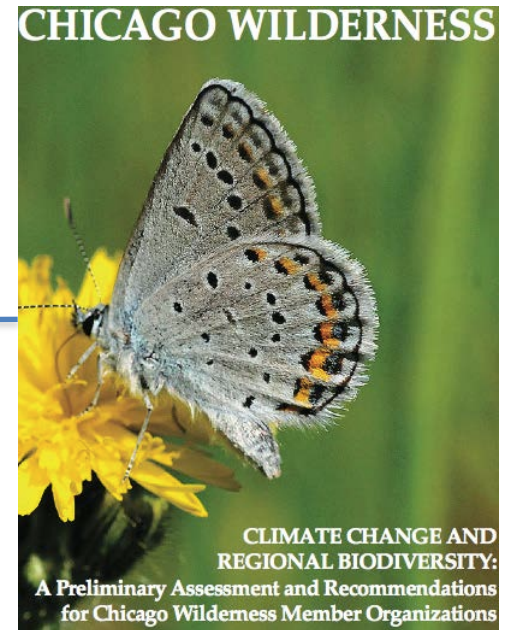


Lake Michigan

Strategic Initiatives



Regional Biodiversity Recovery



Chicago Wilderness Climate Action Plan for Nature





Climate Action Plans

City of Chicago Climate Action Plan

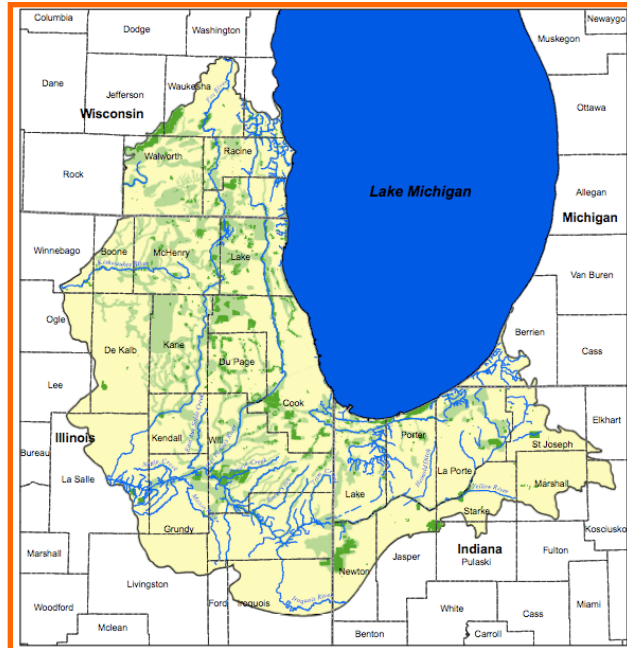
- Human population
- Buildings
- Transportation infrastructure
- Landscaping

- Urban forests
- Water infrastructure
- Vacant land

Chicago Wilderness Climate Action Plan for Nature

- Rivers and lakes
- Restored natural areas
- Remnant natural areas
- Native species

Climate Action Plans



Over 370,000 acres of
protected open space

Chicago Wilderness Climate Action Plan for Nature

- **Mitigation:** ecosystem-based approaches to reducing greenhouse gases in the atmosphere
- **Adaptation:** making natural areas resilient in the face of inevitable climate change
- **Engagement:** creating a “climate for change” through education/outreach

Chicago
Wilderness



BIODIVERSITY RECOVERY PLAN

Climate Change Update

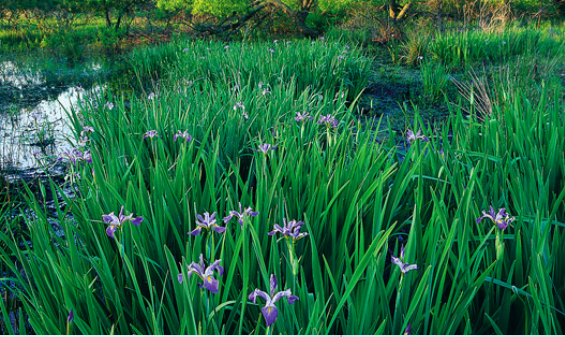
Bridging the Gap(s)





**How is climate change
affecting *our* region?**





What can we expect?



- Changes in precipitation patterns
(wetter winters and springs; drier summers)
- Increases in extreme storm events
(e.g., rain, snow, wind)
- Increases in the number of extreme heat days in summer
(In a high-emissions scenario, 26 days > 90° by mid-century)
- Winters becoming “less cold”
(average nighttime lows increasing; less ice cover = increased beach erosion)

Impacts to biodiversity



Direct effects

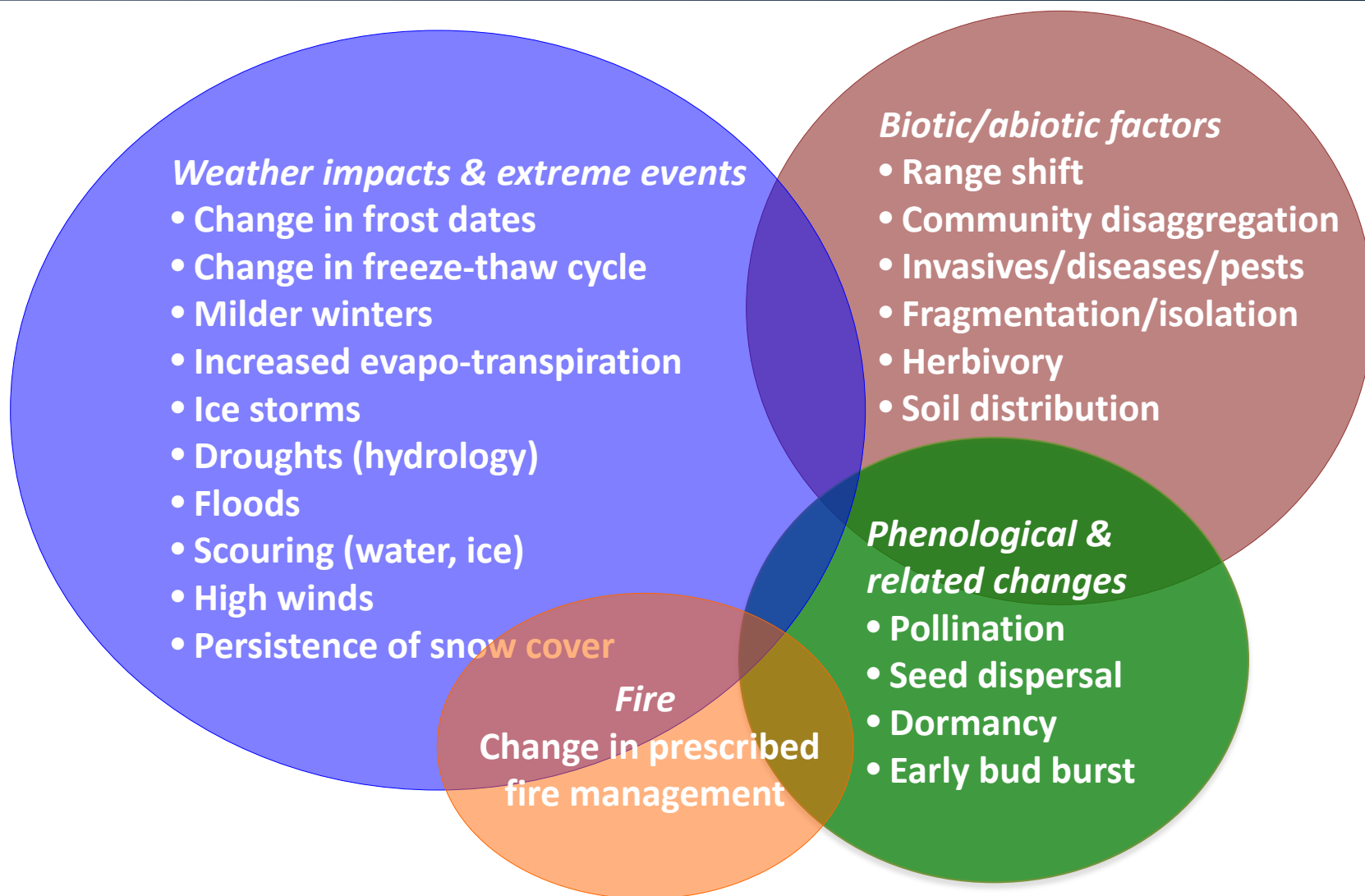
- Temperature
- Precipitation
- Increased intensity of weather events



Indirect effects

- Range shifts
- Predators/disease/invasives
- Timing of important life cycle events

Impacts to plants/natural communities

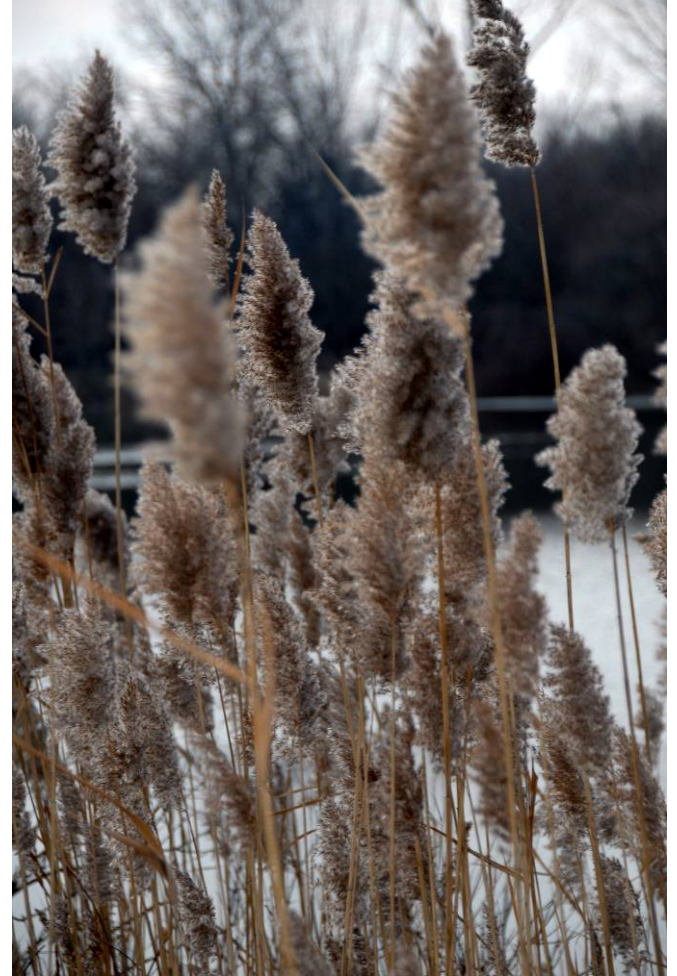




Threats to ecosystem health

- Invasive Species
- Altered natural processes
- Loss of native species
- Altered species composition or structure
- Pollution

**Climate Change = threat
amplifier**



Climate-smart management

How to manage the landscape in a changing climate?

- *promote resistance* – system's ability to remain unchanged in the face of external forces
- *promote resilience* – ability of a system to recover from disturbances
- *transition* – help move a system from one state to another





Identifying climate-sensitive decisions

What planning and management actions could reduce a site's vulnerability to specific climate-related impacts?

- Drought and heat stress
- Extreme storms (e.g., precipitation flashiness and flooding)
- Loss of key functional system or species





(this is how we did it)





Main Page

Chicago
Wilderness



BIODIVERSITY RECOVERY PLAN

Climate Change Update

"It is not the strongest of the species that survive, nor the most intelligent, but the ones most responsive to change!" - Charles Darwin

Changing Landscapes in the Chicago Wilderness Region: A Climate Change Update to the Biodiversity Recovery Plan

Recognizing the potential of climate change to jeopardize the conservation investment that has taken place in the Chicago Wilderness region, in 2007 the Chicago Wilderness Council established Climate Change as one of four thematic initiatives, along with the Green Infrastructure Vision, Leave No Child Inside, and Restoring the Health of Local Watersheds. To plan and carry out the work of this initiative, CW established the Climate Change Task Force (Task Force) to "study and make recommendations on adaptation strategies and models to address the local impact of climate change." In 2008, the Task Force produced *Climate Change and Regional Biodiversity: A Preliminary Assessment and Recommendations*.

- ✧ 100 + regional managers, scientists and researchers contributed
- ✧ place-based adaptation strategies for biodiversity
- ✧ research questions needed to inform climate-smart management
- ✧ web-based tool

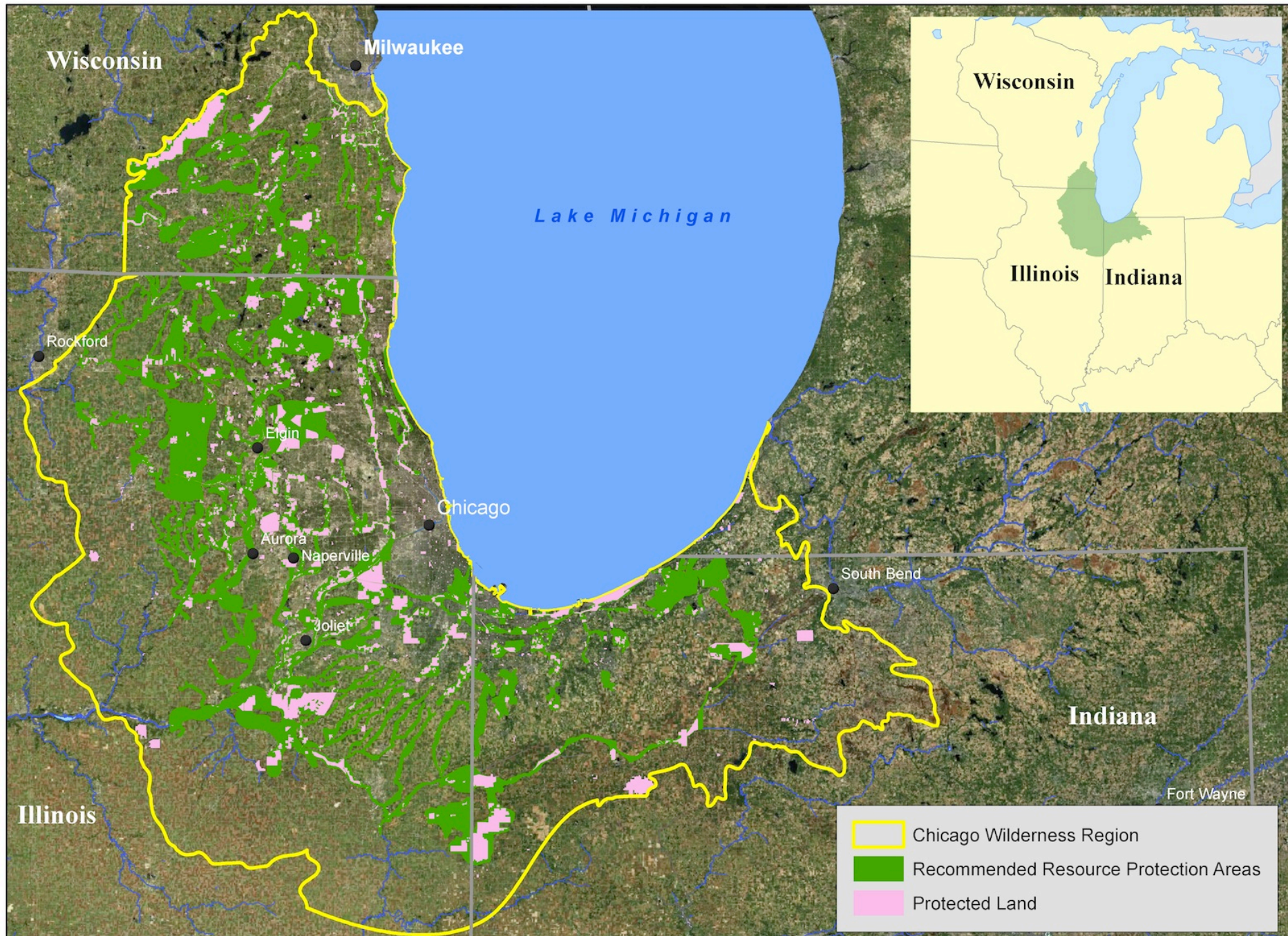
Navigation

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- [Aquatic Communities](#)
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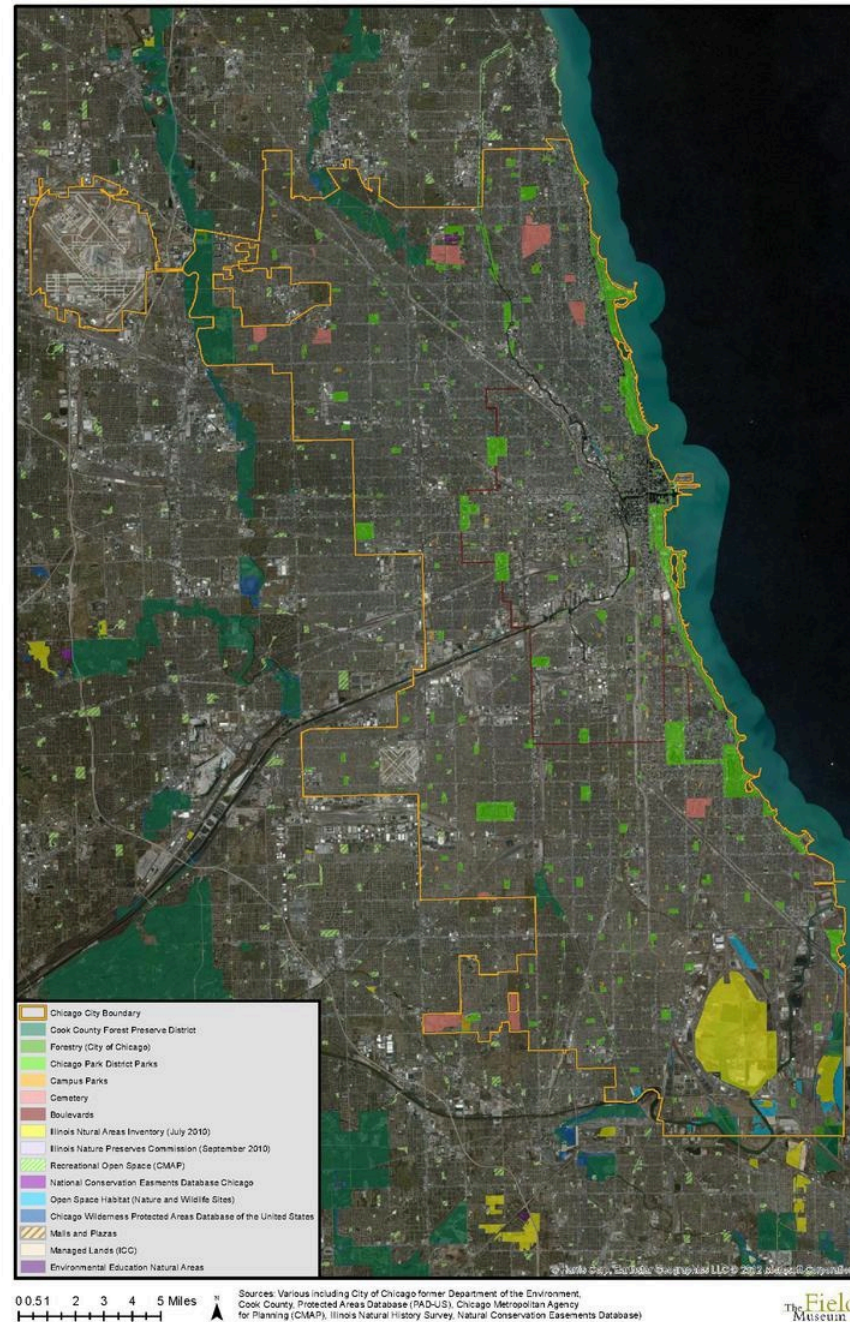
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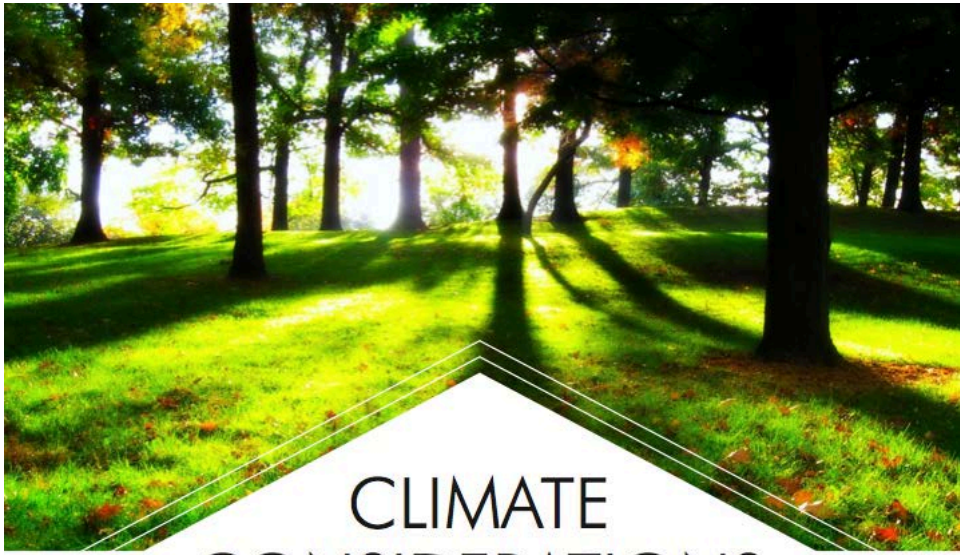
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Chicago Wilderness Green Infrastructure Vision



Chicago Green Infrastructure





CLIMATE CONSIDERATIONS

for **MANAGEMENT of NATURAL
AREAS and GREEN SPACES in the
CITY of CHICAGO**



From “Checklist” to *Guidebook*

- I. Convened based on need expressed by resource managers
- II. 27 people, 15 organizations, 9 City Departments (AKA “Climate Fellows”)
- III. 3 Climate Clinics



Lurie Garden



Northerly Island



City Hall rooftop



Humboldt Park



Lurie Garden



Northerly Island



City Hall rooftop



Humboldt Park

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The screenshot shows the homepage of the Adaptation Collaboratory. The header features the logo "COLLABORATORY for ADAPTATION to CLIMATE CHANGE" and navigation links: Home, myCollab, Resources, Members, Explore, About, Support. A search bar and user account links (Logout, My Account) are also present. The main content area includes a large banner with the text "Welcome to the Collaboratory" and "Informing adaptation to climate change". To the right, a welcome message states: "Welcome to the Adaptation Collaboratory! This website is a resource for research, education, and collaboration in the area of adaptation and climate change. It is funded by the National Science Foundation and the University of Notre Dame. Our team at Notre Dame, and our outreach partners at The Nature Conservancy's Great Lakes Project, invite you to share your information needs, ideas, tools, and experiences in climate change adaptation. Click on a task in the slide show or choose an activity from the menus and start adapting! If you are new to our site, you might start with our Collaboratory Tutorial". Below the banner, there are three columns: "RESOURCES" with a search bar and popular tags (climate change, adaptation, Policy, Government, legal, Law, Adaptation Strategies, Government - State, regulation, Legislation, conservation planning, state governments, SWAPs, State Wildlife Action Plans, Comprehensive Wildlife Conservation Strategies, environmental health, environmental policy, great lakes); "WHAT'S NEW IN RESOURCES" with a list of recent publications and webinars; and "GET INVOLVED" with links to Upload Content, Form working groups, Take a Poll, Give us Feedback, and Contact Us.



Lurie Garden



Northerly Island



City Hall rooftop



Humboldt Park

From “Checklist” to *Guidebook*

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[Home](#) [myCollab](#) [Resources](#) [Members](#) [Explore](#) [About](#) [Support](#)

You are here: [Groups](#) > [Chicago Adaptation Working Group](#)

Chicago Adaptation Working Group

About the Group [Show Public Description \(+\)](#)

This working group was created to promote collaboration among those interested in climate change adaptation that reduces risks to people and nature within the Chicago Region. The group began as a place to coordinate work on an initial set of guidance called “Advancing Adaptation in the City of Chicago: Climate Considerations for Management of Natural Areas and Green Spaces,” an effort that represented collaboration between City of Chicago officials responsible for natural areas and greenspaces, and scientists at the Field Museum, The Nature Conservancy, and the University of Notre Dame. Over 20 “Climate Fellows” that manage or conduct research on natural resources in the Chicago Region helped us frame and develop the guidance. The goal of this group is to help keep this guidance up to date, and to facilitate adaptation decision making within the City. For more information, contact Abigail Derby Lewis at aderby@fieldmuseum.org.

The report can be found on the resources page, or directly accessed here: <https://adapt.nd.edu/resources/1019>

The image shows the cover of a report titled "CLIMATE CONSIDERATIONS" with the subtitle "FOR MANAGEMENT OF NATURAL AREAS AND GREEN SPACES IN THE CITY OF CHICAGO". The cover features a photograph of a park with trees and a path.

Please visit the Discussion page if you:

- Have feedback on the guide.
- Are interested in sharing observations of climate impacts.
- Have an example to share of how your organization has adapted.
- Or would like to start your own discussion!



CLIMATE CONSIDERATIONS

for **MANAGEMENT of NATURAL
AREAS and GREEN SPACES in the
CITY of CHICAGO**



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Lurie Garden



Northerly Island



City Hall rooftop



Humboldt Park

Climate Considerations Guidebook




Opportunities:

- I. Develop academic and applied partnership
- II. Create a community of climate-smart practitioners

The screenshot shows the website for the Collaboratory for Adaptation to Climate Change. The header features the organization's logo and a navigation menu with links: Home, myCollab, Resources, Members, Explore, About, and Support. Below the header, a breadcrumb trail reads: You are here: Groups > Chicago Adaptation Working Group > Discussion. The main content area is titled "Chicago Adaptation Working Group" and includes a search bar. On the left side, there is a sidebar with a thumbnail image of Northerly Island and a list of links: Overview, Members, Wiki, Resources, Messages, Discussion (highlighted), Blog, and Wish List. The main content area displays a list of discussions, each with a document icon, a title, and a brief description. The discussions listed are: "Examples of updating management or planning", "Feedback on the 'Climate Considerations' document, 2013", and "Observations of climate-related changes in Chicago".

Chicago Wilderness

Climate Change Task Force Newsletter

-  Friend on Facebook
-  Follow on Twitter
-  Forward to a Friend

The intention of this newsletter is to keep CW members informed about current climate change related stories, research and local events. Please send submission ideas and comments to Abigail Derby Lewis, newsletter editor, at aderby@fieldmuseum.org.

Table of Contents

Highlighted Species

Climate Change Task Force Announcements

Climate Change Related Stories

Climate Change Research Articles

Highlighted Species



Franklin's ground squirrel (*Spermophilus franklinii*)

Estimates for "temperature
maintaining distance"
projected for small
mammals in northern
Indiana (Franci et al. 2010)

suggest that to track changes in average January temperature that occurred during the mid 20th century, species would have needed to move north at between 0.4 and 2.1 km/year, with that estimate increasing in projections for this century. The U.S. National Climate Assessment Technical Input Report on Impacts to Biodiversity points out such rates are likely to be unattainable for many species, especially in highly modified landscapes, or in aquatic systems with limited connectivity. Modeling on Franklin's ground squirrel, a state-endangered species in Indiana and state threatened in Illinois, suggests this species might be challenged due to complications with habitat fragmentation and therefore unable to expand its range northward within continuous tracts of suitable habitat (Franci et al. 2010). Furthermore, Franklin's ground squirrel, a grassland mammal that inhabits areas with tall grass habitats, may be challenged to move north into

Contact : aderby@fieldmuseum.org

Climate considerations

Drought & heat stress

- Focus on restoring natural hydrology or keeping water on-site (i.e. removing drain tiles, blocking ditches, installing water control structures).
- Where possible manage or create microhabitats that can provide relief for local fauna.
- Where appropriate, seed or plant drought tolerant species.



Climate considerations

Extreme storms (flashiness & flooding)

- Focus on restoring natural hydrology and storm water management.
- Stabilize river and stream banks and slopes, if feasible.
- Where appropriate, plant species capable of withstanding water level fluctuations.





Climate considerations

Other recommendations

- *Increase genetic diversity* of species by widening the seed source collection range, specifically to more southern populations and meta-populations
- *Promote regional tree diversity* through management in natural areas and planting in urban systems to increase resiliency of regional forests
- *Consider the objectives* of restoration efforts *and prioritize* winning battles
- Design and implement a *monitoring protocol* to evaluate climate change on local plants and animals